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P#17

RAW SEQUENCE LISTING

PATENT APPLICATION: US/09/696,169A

DATE: 05/16/2002

TIME: 16:04:11

Input Set : A:\new1614-0244P.ST25.txt
 Output Set: N:\CRF3\05162002\I696169A.raw

3 <110> APPLICANT: VALENTA, Rudolf et al.
 5 <120> TITLE OF INVENTION: NON-ANAPHYLACTIC FORMS OF GRASS POLLEN PH1 P 6 ALLERGEN AND
 THEIR USE
 7 <130> FILE REFERENCE: 1614-0244p
 9 <140> CURRENT APPLICATION NUMBER: 09/696,169A
 C--> 10 <141> CURRENT FILING DATE: 2002-05-06
 12 <160> NUMBER OF SEQ ID NOS: 21
 14 <170> SOFTWARE: PatentIn version 3.0
 16 <210> SEQ ID NO: 1
 17 <211> LENGTH: 29
 18 <212> TYPE: DNA
 19 <213> ORGANISM: Artificial Sequence
 21 <220> FEATURE:
 22 <223> OTHER INFORMATION: Primer derived from Phleum pratense
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 25 gggaaattcca tatgggaaag gccacgacc 29
 28 <210> SEQ ID NO: 2
 29 <211> LENGTH: 45
 30 <212> TYPE: DNA
 31 <213> ORGANISM: Artificial Sequence
 33 <220> FEATURE:
 34 <223> OTHER INFORMATION: Primer derived from Phleum pratense
 36 <400> SEQUENCE: 2
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 40 <210> SEQ ID NO: 3
 41 <211> LENGTH: 29
 42 <212> TYPE: DNA
 43 <213> ORGANISM: Artificial Sequence
 45 <220> FEATURE:
 46 <223> OTHER INFORMATION: Primer derived from Phleum pratense
 48 <400> SEQUENCE: 3
 49 gggaaattcca tatggcagac aagtataag 29
 52 <210> SEQ ID NO: 4
 53 <211> LENGTH: 45
 54 <212> TYPE: DNA
 55 <213> ORGANISM: Artificial Sequence
 57 <220> FEATURE:
 58 <223> OTHER INFORMATION: Primer derived from Phleum pratense
 60 <400> SEQUENCE: 4
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 65 <211> LENGTH: 4
 66 <212> TYPE: PRT
 67 <213> ORGANISM: Phleum pratense

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TECH CENTER 1600/2900

69 <400> SEQUENCE: 5
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 72 1
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 75 <211> LENGTH: 4
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 77 <213> ORGANISM: Phleum pratense
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 81 Lys Ala Thr Thr
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 84 <210> SEQ ID NO: 7
 85 <211> LENGTH: 4
 86 <212> TYPE: PRT
 87 <213> ORGANISM: Phleum pratense
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 91 Lys Tyr Lys Thr
 92 1
 94 <210> SEQ ID NO: 8
 95 <211> LENGTH: 138
 96 <212> TYPE: PRT
 97 <213> ORGANISM: Phleum pratense
 99 <400> SEQUENCE: 8
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 102 1 5 10 15
 105 Val Leu Gly Leu Ala Thr Ser Pro Thr Ala Glu Gly Gly Lys Ala Thr
 106 20 25 30
 109 Thr Glu Glu Gln Lys Leu Ile Glu Asp Val Asn Ala Ser Phe Arg Ala
 110 35 40 45
 113 Ala Met Ala Thr Thr Ala Asn Val Pro Pro Ala Asp Lys Tyr Lys Thr
 114 50 55 60
 117 Phe Glu Ala Ala Phe Thr Val Ser Ser Lys Arg Asn Leu Ala Asp Ala
 118 65 70 75 80
 121 Val Ser Lys Ala Pro Gln Leu Val Pro Lys Leu Asp Glu Val Tyr Asn
 122 85 90 95
 125 Ala Ala Tyr Asn Ala Ala Asp His Ala Ala Pro Glu Asp Lys Tyr Glu
 126 100 105 110
 129 Ala Phe Val Leu His Phe Ser Glu Ala Leu Arg Ile Ile Ala Gly Thr
 130 115 120 125
 133 Pro Glu Val His Ala Val Lys Pro Gly Ala
 134 130 135
 137 <210> SEQ ID NO: 9
 138 <211> LENGTH: 750
 139 <212> TYPE: DNA
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 145 atgttcctcg ctgttgcgt ttttgtggc ttggccacat ccccaactgc agagggaggg 120
 147 aaggccacga ccgaggagca aaaattgatc gaggacatca atgccagctt tagggcgccc 180
 149 atggccacca ctgctaacgt ccctccagca gacaagtata agacattcga agccgccttc 240

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|-----|-------------|--------------|-----------------|-------------|-------------|-------------|-----|
| 151 | acggtgtcct | caaagagaaa | cctcgctgac | gccgttcaa | aggcgccca | gctggtcccc | 300 |
| 153 | aagctcgatg | aagtctacaa | cgcgcctac | aatgctccg | atcatgccgc | cccagaagac | 360 |
| 155 | aagtatgaag | ccttcgtcct | tcactttcc | gaggctctcc | acatcategc | cggtacccccc | 420 |
| 157 | gaggtccacg | ctgtcaagcc | cggcgcgtag | ttgttcagca | cggtaagat | ccttgacagc | 480 |
| 159 | gtcgctgcca | ccggcgctgc | agccaacact | gccatggct | aaaaaaattcg | actagctcct | 540 |
| 161 | tcataacaatg | aatacacatg | tatcattcaa | acatactact | gtacagtatg | tgcatgacct | 600 |
| 163 | agcggcgagc | attttttta | tgattaaatct | tttatacatg | ggcgtgatcg | agcgtgtgca | 660 |
| 165 | tatgtgtaat | aattaatttt | ttatttgtat | ttgaaattgt | aatcctgata | agaaatgcga | 720 |
| 167 | ttaagtccat | ttatgaaaaaa | aaaaaaaaaaa | | | | 750 |
| 170 | <210> | SEQ ID NO: | 10 | | | | |
| 171 | <211> | LENGTH: | 571 | | | | |
| 172 | <212> | TYPE: | DNA | | | | |
| 173 | <213> | ORGANISM: | Phleum pratense | | | | |
| 175 | <400> | SEQUENCE: | 10 | | | | |
| 176 | ccaaacgcacg | agtagacaatg | gcagcgcaca | agttcatgg | ggcgatgttc | ctcgctgttg | 60 |
| 178 | ccgttgtgtt | gggcttggcc | acatccccaa | ctgcagaggg | aggaaaggcc | acgaccgagg | 120 |
| 180 | agcaaaaatt | gattgaggac | gtcaatgcca | gtttagggc | ggccatggcc | accactgcta | 180 |
| 182 | acgtccctcc | agcagacaaag | tataagacat | tcgaagccgc | ttcacgggt | tcctcaaaga | 240 |
| 184 | gaaacacctgc | tgacccgtt | tcaaaggcgc | cccagctgt | ccccaaagctc | gatgaagtct | 300 |
| 186 | acaacgcgc | ctacaatgt | gccgatcatg | ccgccccaga | agacaagtat | gaagccttcg | 360 |
| 188 | tccttcactt | ttccgaggct | ctccgtatca | tcgcccgtac | ccccgaggtt | cacgctgtca | 420 |
| 190 | agccggcgc | gtagtttgc | agcacggta | agatcctga | cagcgtcgct | gccaccggcg | 480 |
| 192 | ctgcagccaa | cactgcccagt | ggctaaaaaa | ttcgactagc | tccttcatac | aatgaataca | 540 |
| 194 | catgtatcat | tcaaaaaaaaaa | aaaaaaaaaa | a | | | 571 |
| 197 | <210> | SEQ ID NO: | 11 | | | | |
| 198 | <211> | LENGTH: | 647 | | | | |
| 199 | <212> | TYPE: | DNA | | | | |
| 200 | <213> | ORGANISM: | Phleum pratense | | | | |
| 202 | <400> | SEQUENCE: | 11 | | | | |
| 203 | accgaggaggc | aaaaattgtat | cgaggacgtc | aatgccagct | ttagggcgcc | catggccacc | 60 |
| 205 | actgctaacg | tccctccagc | agacaagtat | aagacattag | aagccgcctt | cacggtgtcc | 120 |
| 207 | tcaaagagaa | acctcgctga | cgcgtctca | aaggcccccc | agctcgcccc | caagctcgat | 180 |
| 209 | gaagtctaca | acgccccta | caatgctgcc | gatcatgccg | ccccagaaga | caagtatgaa | 240 |
| 211 | gccttcgtcc | ttcactttc | cgaggctctc | cgtatcatg | ccggtaaaaa | cgaggtccac | 300 |
| 213 | gctgtcaagc | ccggcgcgt | gttggcgtac | acggtaaga | tccttgacag | cgtcgctgcc | 360 |
| 215 | accgggtctg | cagccaaacac | tgccagtggc | taaaaaatgc | gaccagctt | ttcatacaat | 420 |
| 217 | gaatacacat | gtatcttca | aacataactac | tgtacagtat | gtgcataacc | tagccgcag | 480 |
| 219 | cattttttt | atgattaatc | ttttatacat | gggcgtgatc | gagcgtgtgc | atatgttaa | 540 |
| 221 | taattaattt | tttattttga | tttggaaatgt | taatcctgat | aagaaatgcg | attaagtcca | 600 |
| 223 | tttatgaaat | atagatggtc | cgtcgattt | taaaaaaaa | aaaaaaaaaa | | 647 |
| 226 | <210> | SEQ ID NO: | 12 | | | | |
| 227 | <211> | LENGTH: | 572 | | | | |
| 228 | <212> | TYPE: | DNA | | | | |
| 229 | <213> | ORGANISM: | Phleum pratense | | | | |
| 231 | <400> | SEQUENCE: | 12 | | | | |
| 232 | gcagacaagt | ataagacatt | cgaaggccccc | ttcacgggt | cctcaaagag | aaacctcgct | 60 |
| 234 | gacgcccgtt | caaaggccgc | ccagctggc | cccaagctcg | atgaagtctt | caacgcgc | 120 |
| 236 | tacaatgtcg | ccgatcatgc | cgcggccagaa | gacaagtatg | aagccttgc | ccttcacttt | 180 |
| 238 | tccgaggctc | tccacatcat | cgcgttacc | cccgagggtcc | acgctgtcaa | gcccgccgcg | 240 |

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| | | | | | | | |
|-----|-----------------------------------------------------------------|-------------|-----------------|-------------|-------------|-------------|-----|
| 240 | tagttgttca | gcacggtaaa | gatccttgcac | agcgctcgctg | ccaccggcgc | tgcagccaac | 300 |
| 242 | actgccagtg | gctaaaaaaat | tcgacttagct | ccttcataca | atgaatacac | atgtatcatt | 360 |
| 244 | caaacataact | actgtacagt | atgtgcatga | cctagcggcg | agcattttt | ttatgattaa | 420 |
| 246 | tcttttatac | atggcgtga | tcgagcgtgt | gcataatgtt | aataattaat | tttttatttt | 480 |
| 248 | gatttgaaat | tgtaatcctg | ataagaaatg | cgattaagtc | catttaaaaaa | aaaaaaaaaa | 540 |
| 250 | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaa | aaaaaaa | aaaaaaa | 572 |
| 253 | <210> | SEQ ID NO: | 13 | | | | |
| 254 | <211> | LENGTH: | 474 | | | | |
| 255 | <212> | TYPE: | DNA | | | | |
| 256 | <213> | ORGANISM: | Phleum pratense | | | | |
| 258 | <400> | SEQUENCE: | 13 | | | | |
| 259 | tcaaaggcgc | cccagctgg | ccccaaagctc | gatgaagtct | acaacgcccgc | ctacaatgt | 60 |
| 261 | gccgatcatg | ccgccccaga | agacaagtat | gaaggcctcg | tccttcactt | ttccgaggct | 120 |
| 263 | ctccacatca | tcgcccgtac | ccccgagggtc | cacgctgtca | agcccgccgc | gtagttgttc | 180 |
| 265 | agcacggta | agatcctga | cagcgtcgt | gccaccggcg | ctgcagccaa | cactgcccagt | 240 |
| 267 | ggctaaaaaa | tgcacttagc | tccttcatac | aatgaataca | catgtatcat | tcaaacatac | 300 |
| 269 | tactgtacag | tatgtgcatg | acctagcggc | gagcattttt | tttatgatta | atctttata | 360 |
| 271 | catggcgtg | atcgagcgtg | tgcataatgt | taataattaa | tttttatttt | tgatttgaaa | 420 |
| 273 | ttgtatcct | gataagaaat | gcgattaagt | ccatttatga | aaaaaaaaaa | aaaa | 474 |
| 276 | <210> | SEQ ID NO: | 14 | | | | |
| 277 | <211> | LENGTH: | 554 | | | | |
| 278 | <212> | TYPE: | DNA | | | | |
| 279 | <213> | ORGANISM: | Phleum pratense | | | | |
| 281 | <400> | SEQUENCE: | 14 | | | | |
| 282 | cagctggtcc | ccaagctcga | tgaagtctac | aacggccct | acaatgctgc | cgatcatgcc | 60 |
| 284 | gccccagaag | acaagtatga | agccttcgtc | tttcactttt | ccgaggctct | ccacatcatc | 120 |
| 286 | gcccgtaccc | ccgaggtcca | cgctgtcaag | cccgccgcgt | agttgttcag | cacggtaag | 180 |
| 288 | atccctgaca | gctgcgtgc | caccggcgt | gcagccaaaca | ctgcccagtgg | ctaaaaaatt | 240 |
| 290 | cgtactagctc | tttcatacaa | tgaatacaca | tgtatcatc | aaacatacta | ctgtacagta | 300 |
| 292 | tgtgcata | ctagccgcga | gcattttttt | tatgattaat | cttttataca | tggcgtgat | 360 |
| 294 | cgagcgtgt | catatgtgt | ataattaatt | tttttatttt | atttgaattt | gtaatcctga | 420 |
| 296 | taagaaatgc | gattaagtcc | atttatgaaa | tatagatggt | ctgtcggtat | ttaaaaaaa | 480 |
| 298 | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | aaaaaaaaaa | 540 |
| 300 | aaaaaaaaaa | aaaa | | | | | 554 |
| 304 | <210> | SEQ ID NO: | 15 | | | | |
| 305 | <211> | LENGTH: | 138 | | | | |
| 306 | <212> | TYPE: | PRT | | | | |
| 307 | <213> | ORGANISM: | Phleum pratense | | | | |
| 309 | <400> | SEQUENCE: | 15 | | | | |
| 311 | Met Ala Ala His Lys Phe Met Val Ala Met Phe Leu Ala Val Ala Val | | | | | | |
| 312 | 1 | 5 | 10 | 15 | | | |
| 315 | Val Leu Gly Leu Ala Thr Ser Pro Thr Ala Glu Gly Gly Lys Ala Thr | | | | | | |
| 316 | 20 | 25 | 30 | | | | |
| 319 | Thr Glu Glu Gln Lys Leu Ile Glu Asp Ile Asn Ala Ser Phe Arg Ala | | | | | | |
| 320 | 35 | 40 | 45 | | | | |
| 323 | Ala Met Ala Thr Thr Ala Asn Val Pro Pro Ala Asp Lys Tyr Lys Thr | | | | | | |
| 324 | 50 | 55 | 60 | | | | |
| 327 | Phe Glu Ala Ala Phe Thr Val Ser Ser Lys Arg Asn Leu Ala Asp Ala | | | | | | |
| 328 | 65 | 70 | 75 | 80 | | | |

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331 Val Ser Lys Ala Pro Gln Leu Val Pro Lys Leu Asp Glu Val Tyr Asn
332 85 90 95
335 Ala Ala Tyr Asn Ala Ala Asp His Ala Ala Pro Glu Asp Lys Tyr Glu
336 100 105 110
339 Ala Phe Val Leu His Phe Ser Glu Ala Leu His Ile Ile Ala Gly Thr
340 115 120 125
343 Pro Glu Val His Ala Val Lys Pro Gly Ala
344 130 135
347 <210> SEQ ID NO: 16
348 <211> LENGTH: 138
349 <212> TYPE: PRT
350 <213> ORGANISM: Phleum pratense
352 <400> SEQUENCE: 16
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355 1 5 10 15
358 Val Leu Gly Leu Ala Thr Ser Pro Thr Ala Glu Gly Gly Lys Ala Thr
359 20 25 30
362 Thr Glu Glu Gln Lys Leu Ile Glu Asp Val Asn Ala Ser Phe Arg Ala
363 35 40 45
366 Ala Met Ala Thr Thr Ala Asn Val Pro Pro Ala Asp Lys Tyr Lys Thr
367 50 55 60
370 Phe Glu Ala Ala Phe Thr Val Ser Ser Lys Arg Asn Leu Ala Asp Ala
371 65 70 75 80
374 Val Ser Lys Ala Pro Gln Leu Val Pro Lys Leu Asp Glu Val Tyr Asn
375 85 90 95
378 Ala Ala Tyr Asn Ala Ala Asp His Ala Ala Pro Glu Asp Lys Tyr Glu
379 100 105 110
382 Ala Phe Val Leu His Phe Ser Glu Ala Leu Arg Ile Ile Ala Gly Thr
383 115 120 125
386 Pro Glu Val His Ala Val Lys Pro Gly Ala
387 130 135
390 <210> SEQ ID NO: 17
391 <211> LENGTH: 106
392 <212> TYPE: PRT
393 <213> ORGANISM: Phleum pratense
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398 1 5 10 15
401 Ala Met Ala Thr Thr Ala Asn Val Pro Pro Ala Asp Lys Tyr Lys Thr
402 20 25 30
405 Leu Glu Ala Ala Phe Thr Val Ser Ser Lys Arg Asn Leu Ala Asp Ala
406 35 40 45
409 Val Ser Lys Ala Pro Gln Leu Val Pro Lys Leu Asp Glu Val Tyr Asn
410 50 55 60
413 Ala Ala Tyr Asn Ala Ala Asp His Ala Ala Pro Glu Asp Lys Tyr Glu
414 65 70 75 80
417 Ala Phe Val Leu His Phe Ser Glu Ala Leu Arg Ile Ile Ala Gly Thr
418 85 90 95
421 Pro Glu Val His Ala Val Lys Pro Gly Ala

VERIFICATION SUMMARY

PATENT APPLICATION: US/09/696,169A

DATE: 05/16/2002

TIME: 16:04:12

Input Set : A:\new1614-0244P.ST25.txt
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L:10 M:271 C: Current Filing Date differs, Replaced Current Filing Date